SONY®

CASSETTE TO CASSETTE PRINTER

CCP-13B

OPEN REEL MASTER

ORM-10

CASSETTE PRINTER

CCP-04B

3000048
SONY BDA
CCP04B

OPERATING INSTRUCTIONS page 2

Before operating the set, please read this manual thoroughly.
This manual should be retained for future reference.

MODE D'EMPLOI page 18

Avant la mise en service de l'appareil, lire attentivement ce mode d'emploi.
Conserver ce manuel pour toute référence ultérieure.

MANUAL DE INSTRUCCIONES página 34

Antes de manipular el aparato, lea usted este manual detenidamente.
Conserve este manual pare futuras referencias.

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English

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BEFORE USE

This instruction manual covers the CCP-13B cassette-to-cassette printer, the ORM-10 open reel master and the CCP-04B cassette printer, which form a complete line of high speed cassette printers. With multiple connections of these units, up to 11 cassettes can be copied simultaneously. For duplication of more than 11 cassettes, the AA-10 adaptor unit is necessary to amplify the output levels. Each unit is separately available.

OWNER'S RECORD

The model and serial numbers are located at the rear of CCP-13B and CCP-04B and at the right side of the ORM-10. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding these products.

Model No. CCP-13B Serial No._____
Model No. CCP-04B Serial No._____
Model No. ORM-10 Serial No._____

WARNING

- To prevent fire or shock hazard, do not expose the set to rain or moisture.
- To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

PRECAUTIONS

On safety
- Before operating, check to see that your unit is set to the same voltage and frequency as your local power line. Refer to "NOTICE ON OPERATING VOLTAGE AND FREQUENCY".
- Operate only with the supplied ac power cord; do not use any other type.
- Unplug the unit from the wall outlet when it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never pull it by the cord.
- Should any liquid or solid objects fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.

On installation
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subjuct to direct sunlight, excessive dust, or mechanical vibration, shock, or excessive noise levels such as is caused by electro-photocopiers or similar devices.
- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.

On operation
- While duplicating, take care not to turn ON or OFF the POWER switch of any other equipment as a click sound will be recorded.
- Keeping the tape heads in a clean condition is essential to the proper operation of the unit. For maintenance information, refer to page 15.
- If the cassette printers are installed in an area of ambient temperature above 25°C (77°F), it is recommended that the system be rested every 7 or 8 hours for cooling for approximately one hour.
- When the unit is not used, turn the power off to conserve energy and to extend the useful life of the unit.

On system
- If you already have a CCP-13A or CCP-04A printer unit, please connect and operate it in the same manner as for the CCP-13B or CCP-04B although some differences will be found in the panel indications.
- If you already have a CCP-13 or CCP-04 printer unit, please note that there are some differences between the models CCP-13 and CCP-13B, and the CCP-04 and CCP-04B. When connecting up the CCP-13 or CCP-04, please consult your nearest Sony dealer for the proper connection and operation of those models, and read the respective instruction manual.

If you have any question or problem concerning your unit that is not covered in this booklet, please consult your nearest Sony dealer.

FEATURES

CCP-13B CASSETTE TO CASSETTE PRINTER

The Sony CCP-13B is an easy-to-operate cassette-to-cassette printer designed to make up to 3 high-grade duplicate recordings simultaneously.

- High speed cassette duplication at 8 times normal speed.
- Track selectors to choose four-track four-channel (both sides of cassette), or four-track two-channel (one side of cassette) in one run duplicating.
- In both sides duplicating, all tapes are rewound automatically, and then the tapes stop automatically, and in one side duplicating, at each end-of-tape the tapes stop automatically.
- Each track is provided with a level control calibrated in 1 dB steps and a level meter for properly balanced duplicates.
- Heads are made of durable ferrite, with a precision gap and a micro-smooth finish to ensure optimum recording quality.
- Bias actuated RECORD indicators light during duplicating.
- To extend its capabilities, the CCP-13B, is equipped with connectors on the rear panel to accept an additional CCP-13B, CCP-04B printer, or ORM-10 open reel master, or the AA-10 adaptor unit to duplicate on more than 2 additional printers.

CCP-04B CASSETTE PRINTER

The Sony CCP-04B is a cassette printer designed to make up to 4 high speed duplicates simultaneously when connected to the CCP-13B cassette-to-cassette printer or the ORM-10 open reel master. The features of the CCP-04B are the same as those of the copy section of the CCP-13B, but the CCP-04B is not equipped with level controls or meters.

ORM-10 OPEN REEL MASTER

The Sony ORM-10 is an open reel master reproducer which is designed to transfer open reel tape material to cassette format with the CCP-13 or CCP-04 series cassette printer.

- High speed reproduction at 8 times normal speed: two master reel speeds—60 ips (152 cm/s) and 30 ips (76 cm/s).
- Track selector for four-track two-channel, two-track two-channel and two-track one-channel tapes.
- Reel size selector for 5-inch (130 mm) and 7-inch (180 mm) reels.
- Automatic rewind and automatic stop systems with sensing foils.
- Each track is provided with a level control calibrated in 1 dB steps and a level meter for properly balanced output signals.
- Matching design for the cassette printers and the AA-10 adaptor unit. With multiple combinations of these printer series, a quantity of cassettes can be copied simultaneously.

CAUTION

Discs, recorded tapes, broadcasts and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provisions of the copyright laws.

NOTICE ON OPERATING VOLTAGE AND FREQUENCY

Before operating any unit, look at the nameplate located on the CCP-13B and CCP-04B rear panels and the ORM-10 right side panel to insure that your unit is adjusted to the same voltage and frequency as your local power line.
The CCP-13B, CCP-04B and ORM-10 come in four types.

USA and Canadian models	set at 120 V ac, 60 Hz.
European model	set at 220 V ac, 50 Hz.
UK model	set at 240 V ac, 50 Hz.
General Export model	set at 110 V ac, 50/60 Hz.

To operate on any other voltage or frequency, consult your Sony dealer in the country where the unit will be used.

WARNING FOR THE CUSTOMERS IN THE UNITED KINGDOM

THIS APPARATUS MUST BE EARTHED to your 3-pin plug in accordance with following instructions.

IMPORTANT

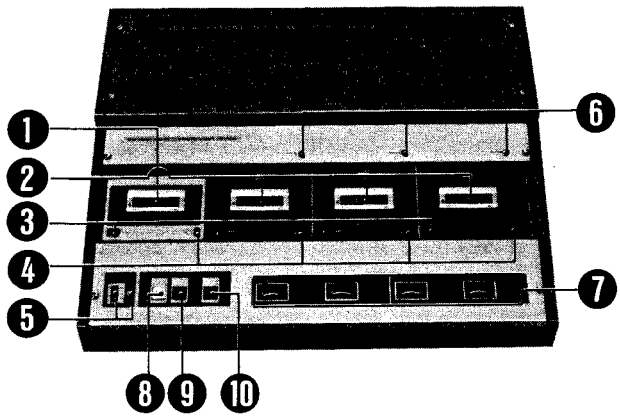
The wires in this mains lead are coloured in accordance with the following code:

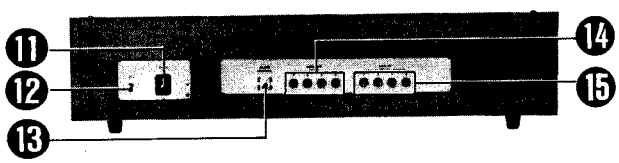
Green-and-yellow:	Earth (safety earth)
Blue	: Neutral
Brown	: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug, proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

PARTS IDENTIFICATION

CCP-13B CASSETTE TO CASSETTE PRINTER





❶ ORIGINAL cassette compartment

❷ COPY cassette compartments

❸ EJECT buttons
Depress to eject a cassette.

❹ Track selectors
Select one or both sides of the original cassette in one run of duplicating.
2CH: for one side duplication. At each end-of-tape, the tapes will stop automatically.
4CH: for both sides duplication. At the end-of-tape of original cassette, the tapes will be rewound automatically, and at each beginning-of-tape the tapes will stop automatically.
The left-most selector for the original cassette also controls the automatic tape rewind and stop systems. See page 9.

❺ POWER switch and pilot lamp
Turn the switch ON and the lamp will light.
- Allow a few seconds of build-up time before operating the unit.

❻ RECORD indicators
In the duplicating mode, when the recording bias current is applied to the recording heads, the indicators illuminate.
When the original tape is set in the rewind mode at the end-of-tape in both sides duplication, the indicators will go off.
At each tape-end-stop in one side duplication, the indicators will stay on showing that the printer is in standby for duplicating the other side or the next duplicating. To turn off the indicators, depress the STOP button.

❼ LEVEL CONTROL knobs and meters
These knobs control the output level of each track of the original tape; turn to the right to increase the level, to the left to decrease it. The level is shown on the respective meters. Adjust the levels before starting duplication as described in "LEVEL ADJUSTMENTS" on page 7.
- When the CCP-13B is connected to the ORM-10, the meter deflections show the level of the open reel master tape.

❽ REWIND button
Depress to rewind the tapes. When the rewinding is finished, the tapes will stop automatically at each end-of-tape. To stop the rewind mode manually, push the STOP button.
- When no cassette is inserted in a compartment, the rewind function of that compartment is inoperative.
- When an additional cassette printer is connected, set the left-most track selectors on both printers to 4CH so that the tapes of the additional cassette printer can be rewound simultaneously.

❾ STOP button
Depress to stop the tapes.
Also controls the stop function of all additional printers connected.

❿ RECORD button
Depress to duplicate the tapes.
Also controls the record function of all additional printers connected.

⓫ AC IN socket
Plug the ac power cord (supplied) into the AC IN socket, and then into a wall outlet.
- Before connecting, make sure that the POWER switch is OFF.

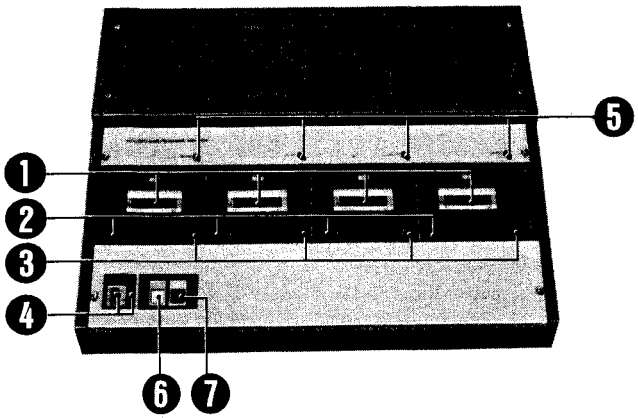
⓬ GND (ground) terminal
For units which use a 2-connector power cord, it is recommended that the GND terminal be connected to a convenient good ground or directly to an earth rod.
For units which use a self-grounding 3-connector power cord, the ground connection is not necessary. However, if required to reduce hum, connect the GND terminal to a convenient good ground or directly to an earth rod.
- When connecting an additional printer, the GND terminal can be connected to the ground terminal of an adjacent unit which has been correctly grounded.

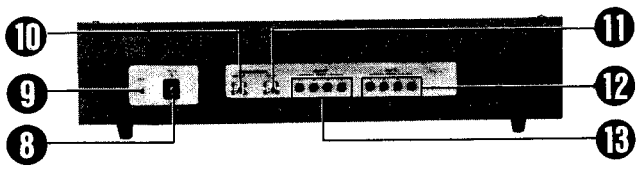
⓭ CONTROL connector
This 6-pin Amplok connector has input and output functions. It accepts the driving signal of the master printer, or sends the driving signal of the master printer to the additional printer. For details of connections, refer to pages 8, 10 and 11.

⓮ LINE OUT connectors
These send the track signals of the original program to the additional printer.

⓯ LINE IN connectors
These accept the track signals from another master printer.

CCP-04B CASSETTE PRINTER





❶ COPY cassette compartments

❷ EJECT buttons
Depress to eject a cassette.

❸ Track selectors
Select one side or both sides of the cassettes for one run of duplicating.
2 CH: for one side duplication.
4 CH: for both sides duplication.
The left-most (COPY 1) track selector also controls the automatic rewind and stop system. See page 9.

❹ POWER switch and pilot lamp
Turn the switch ON and the lamp will light.
- Allow a few seconds of build-up time before operating the unit.

❺ RECORD indicators
In duplicating mode, when the recording bias current is applied to the recording head, the indicators illuminate.
When the original tape enters the rewind mode after both sides duplication, the indicators will go off.
At each tape-end-stop in one side duplication the indicators will stay on showing that the printer is in standby for duplicating the other side or the next cassette.
To turn off the indicators, depress the STOP button.

❻ REWIND button
To rewind the CCP-04B tapes only, depress this button. At each end-of-tape, the tapes will stop automatically. To stop the rewind mode manually, depress the STOP button.
- When no cassette has been inserted in a compartment, the rewind function of that compartment is inoperative.

❼ STOP button
To stop the CCP-04B tapes only, depress this button.

❽ AC IN socket
Plug the ac power cord (supplied) into the AC IN socket, and then into a wall outlet.
- Before connecting, make sure that the POWER switch is OFF.

❾ GND (ground) terminal
To reduce hum, connect the GND terminal to the CCP-13B GND terminal which has been correctly grounded, or to a convenient good ground or directly to an earth rod.

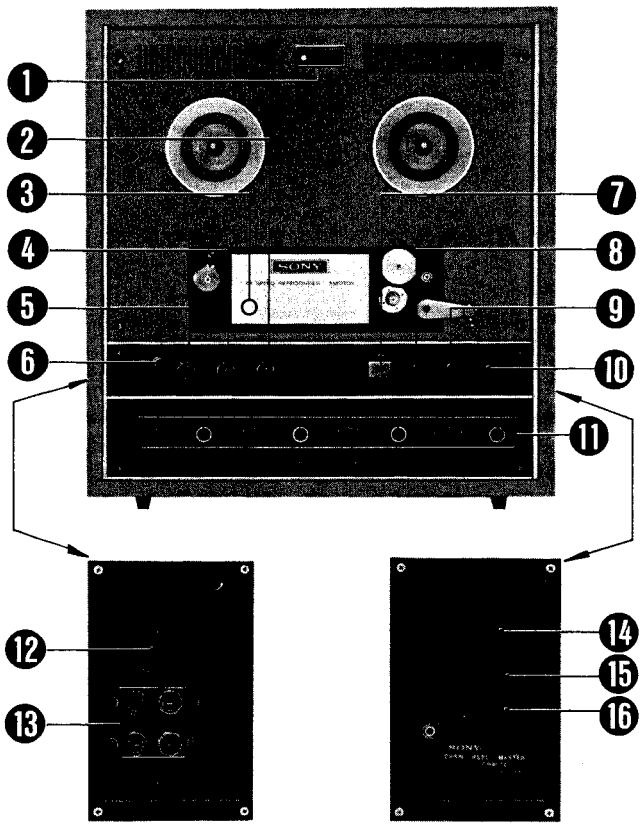
❿ CONTROL OUTPUT connector
Sends the driving signal accepted from the master printer to an additional printer. For details of connections, refer to pages 8, 10 and 11.

⓫ CONTROL INPUT connector
Accepts the driving signal from the master printer.

⓬ LINE IN connectors
Accept the track signals from the master printer.

⓭ LINE OUT connectors
Send the track signals from the master printer to an additional printer.

ORM-10 OPEN REEL MASTER



❶ Tape counter and reset button
Use the counter for indexing tape contents. At the first foil attached on the tape, set the counter to "0000" by pushing the reset button. The figures on the counter change as the tape passes.
Use the counter when starting from a particular section of the tape program to identify the starting point.

❷ TRACK selector and indicators
Choose the position according to the channel used on the open reel tapes, and the associated indicator will illuminate.
4T-4CH: for four-track two-channel tapes.
2T-2CH: for two-track two-channel or two-track one-channel tapes.
For details, refer to page 12.

❸ Automatic shut-off switch lever
Activated by a wire lever under the head cover. When the tape is threaded, the tape contacts the lever and holds it in operating position. If the tape runs out or breads, the lever falls forwards and activates the shut-off mechanism which stops the tape transport.

❹ REEL SIZE selector
Select the optimal rewind tension and reel torque for the reel used. Use the same size reel for both supply and take-up.
Position 7: for 7-inch (180 mm) reels.
Position 5: for 5-inch (130 mm) reels.

❺ TAPE SPEED selector
Select tape speed according to the original speed of the master tape.
Position 7½ × 8: for 7½ ips (19 cm/s).
Position 3¾ × 8: for 3¾ ips (9.5 cm/s).

❻ POWER switch and pilot lamp
Turn the switch ON and the lamp will light.
- Allow 10 seconds of build-up time before operating.

❼ ◀◀REW (rewind) button
Depress to rewind the master tape only.

❽ ■STOP button
Depress to stop the master tape only.

❾ ▶COPY button
Depress to start the tape duplication. When this button is depressed, the master tape is reproduced and the cassette printer will start to duplicate on all the cassettes.

❿ ▶STAND BY button
Use the button for cueing the program start or level adjustment. For details, refer to "CUEING THE TAPE START" on page 11.
When the button is depressed, only the master tape will start up.

⓫ MASTER LEVEL controls and meters
These control the output level of each track of the master tape; turn to the right to increase the output level and to the left to decrease it. The level is shown on the respective meters. A 0 level reading in the meter corresponds to an output level of 24.5 mV. Depress the ▶STAND BY button to play back the master tape only, and adjust the output level so that the pointers of the level meters deflect as closely as possible to 0 level at the highest signal level passage of the program. The pointers may go over 0 an instant at a sudden high level burst, but this is not harmful. These knobs are calibrated in 1 dB steps.

⓬ SLAVE CONTROL connector
Sends the driving signal to a cassette printer. For details of connections, refer to pages 10 and 11.

⓭ LINE OUT connectors
Connect the track signal to the cassette printer.

⓮ POWER SUPPLY socket
Plug the ac power cord (supplied) into this socket, and then into a wall outlet.
- Before connecting, make sure that the POWER switch is OFF.

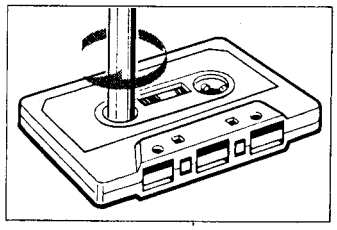
⓯ Fuse holder (For the General Export model, a fuse plate is installed internally.)
If the fuse blows, consult your nearest Sony dealer.

⓰ OUTLET 300 W UNSWITCHED socket (only for USA and Canadian models)
Use this outlet as an ac power source for other printers whose power consumption is less than 300 watts. This socket is not controlled with the ORM-10 POWER switch.

CASSETTE TO CASSETTE DUPLICATION

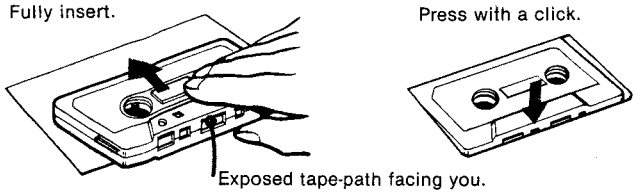
CASSETTE INSERTION

❶ Before inserting a cassette, take up any slack in the tape by inserting a pencil into the hub of the cassette and turning it a few times.



❷ Check the cassette sides.
For both sides duplication: To duplicate the content of the original cassette side A onto the side A of the copy cassette, install the cassesttes with the same side up.
For one side duplication: Insert the original and copy cassettes with the desired side upwards.

❸ Insert the original cassette in the left-most ORIGINAL compartment of the CCP-13B.



❹ After adjusting the duplicating level (see "LEVEL ADJUSTMENT"), insert the copy cassettes in the same manner.

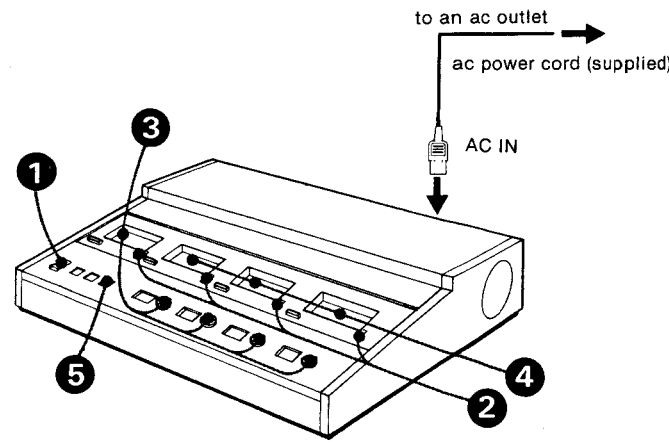
NOTES ON CASSETTES
- Use normal TYPE I cassettes.
- Use the same duration cassette tape for the copy cassette as that used for the original cassette. For example, if the original cassette is a C-60, use a C-60 for the copy. Moreover, it is recommended to use cassettes of the same brand, as they may differ a little in length, depending on the manufacturers, even if the cassettes have the same rated duration. This prevents incomplete duplication.
- For the copy tapes, use a blank cassette, because the printer is not equipped with an erase head. When using a previously recorded tape, erase the recorded material with a commercially-available bulk eraser which operates on the ac power supply. If a recorded tape is used, the previous program will still be audible under the new program.
- When duplicating only one side of the cassette, it is possible to use a cassette with the other side recorded.
- Remember that the printer duplicates the original cassette tape, even though the copy cassette has had the safety tabs removed.

LEVEL ADJUSTMENT

Before duplicating, insert the original cassette in the CCP-13B ORIGINAL compartment without inserting copy cassettes, depress the RECORD button to play the original cassette and check the level of each track by watching the level meters.
Generally, record level should be adjusted so that the pointers of the meters deflect as close as possible to 0 level at the highest signal-level passage of the program you want to record. The pointers may go over the 0 level for an instant at a sudden high level burst, this is not harmful.
Turn the appropriate LEVEL CONTROL knob to the right for a higher recording level; to the left for a lower level. These knobs are calibrated in 1 dB steps.
When the adjustment is completed, press the STOP button and then the REWIND button to rewind the original tape to the beginning.

DUPLICATION WITH A SINGLE CCP-13B

- The numbers in the illustration refer to the sequence of operations.



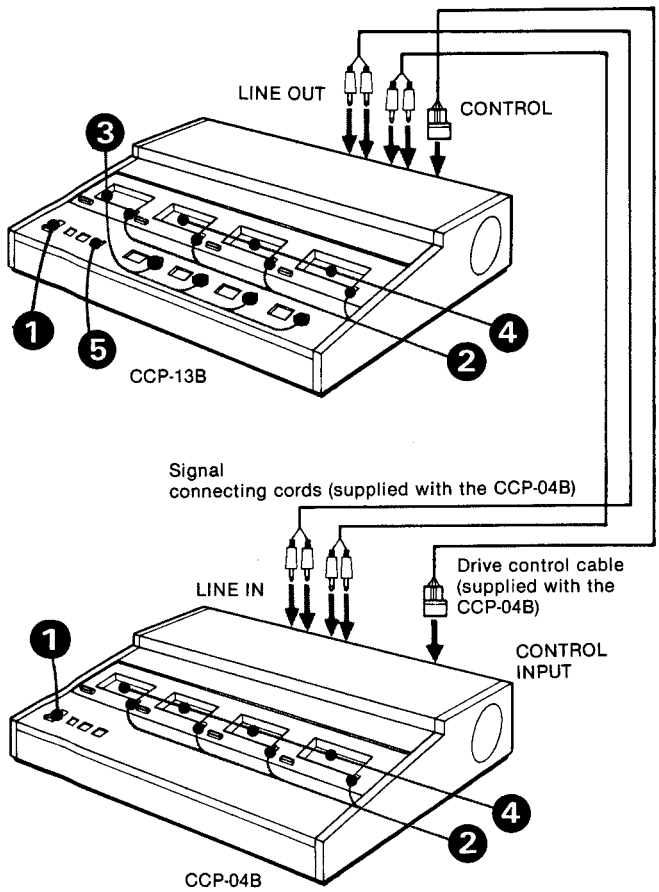
❶ Turn the POWER switch ON. Allow a few seconds of build-up time before operating the unit.
❷ Set the track selectors to 2CH for one side or to 4CH for both sides duplication, as desired.
❸ Insert the original cassette and adjust the track level as described before.
❹ Insert copy cassettes.
- If the tapes are not completely wound to the left reel, press the REWIND button. When the tapes are rewound to the beginning, the rewind mode will stop automatically.

❺ Depress the RECORD button. The RECORD indicators will light and the duplication will begin.

When the duplication is finished, the tapes will stop or be rewound and will stop according to the left-most track selector setting. See page 9.
- To stop the tapes before reaching the end, press the STOP button.

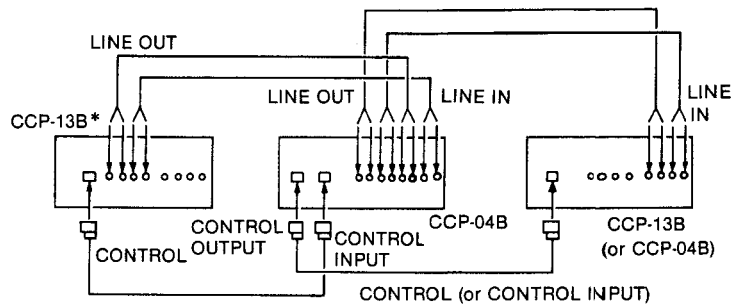
USING AN ADDITIONAL CCP-04B PRINTER

Connect the CCP-04B to the CCP-13B as illustrated and connect the units to appropriate ac outlets.
The method of operation is the same as described for duplication with a single CCP-13B; the numbers in the illustration refer to the sequence of operations.



❶ Turn the POWER switches ON. Allow a few seconds of build-up time before operating the units.
❷ Set the track selectors to 2CH for one side or to 4CH for both sides duplication, as desired.
❸ Insert the original cassette and adjust the track level as described before.
❹ Insert copy cassettes.
● If the tapes are not completely wound to the left reel, press the REWIND button. When the tapes are rewound to the beginning, the rewind mode will stop automatically.
❺ Depress the RECORD button. The RECORD indicators will light and the duplication will begin.

The tapes in the CCP-04B can be stopped with the CCP-13B STOP button, and in the 4CH mode, the tapes can be rewound with the CCP-13B REWIND button. See "TYPICAL OPERATING CONDITION".
To stop or rewind the CCP-04B tapes only, depress the respective button of the CCP-04B.
● When using a CCP-13B as an additional printer, do not insert a cassette into its ORIGINAL cassette compartment, but set the track selector for the ORIGINAL compartment according to the position set for the original cassette in the master CCP-13B.
● When using two additional cassette printers, note the connection order.



* Nothing should be connected to the first CCP-13B LINE IN jacks. Otherwise, the signal of the original cassette in it cannot be duplicated.

TYPICAL OPERATING CONDITIONS

Driving signals are relayed from the master CCP-13B and control the operating mode of each unit according to the left-most track selector setting.

AUTOMATIC REWIND AND STOP SYSTEMS

When the track selector is set to 4CH: The tapes will be rewound automatically at end-of-tape of the original cassette and at each beginning-of-tape the tapes will stop automatically.

When the selector is set to 2CH: The tapes will stop automatically at each end-of-tape.

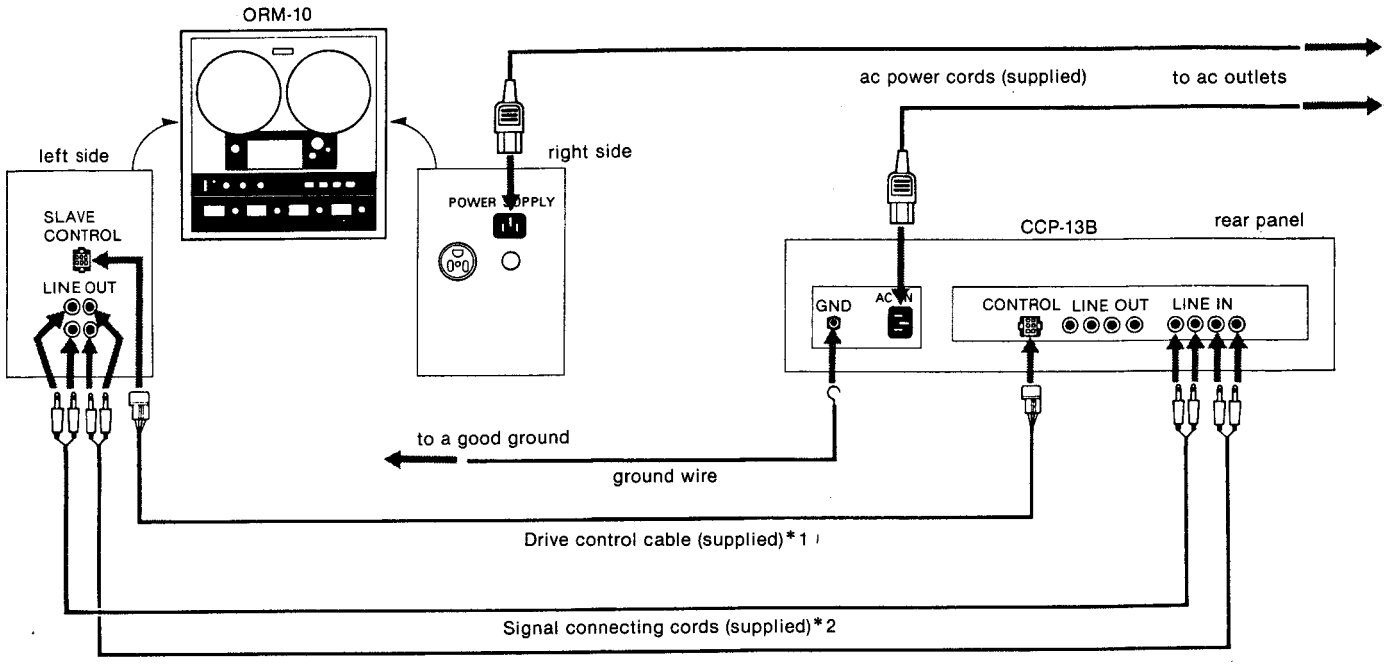
When the CCP-04B cassette printer is connected, be sure to set its left-most track selector (COPY 1) to the same position as for the original cassette.

CCP-13B			1st additional printer		2nd
Operating button	ORIGINAL section	COPY section	Operating button	COPY section	COPY section
RECORD (track selector 4CH)	Reproduction → Auto rewind → Auto stop	→ Record → Auto rewind → Auto stop	relayed → relayed (track selector 4CH)	→ Record → Auto rewind → Auto stop	→ Record → Auto rewind → Auto stop
RECORD (2CH)	Reproduction → Stop (tape end)	→ Record → Stop (tape end)	relayed → (2CH)	→ Record → Stop (tape end)	→ Record → Stop (tape end)
REWIND	Rewind	→ Rewind		→ Rewind*	→ Rewind*
STOP	Stop	→ Stop		→ Stop	→ Stop
		Rewind*	REWIND (CCP-13B)	→ Rewind	→ Rewind*
		Stop	STOP (CCP-13B)	→ Stop	→ Stop
			REWIND (CCP-04B)	Rewind	
			STOP (CCP-04B)	Stop	

↓ automatic operating mode ⇄ relayed * only in 4CH mode

OPEN REEL TAPE TO CASSETTE DUPLICATION

CONNECTIONS

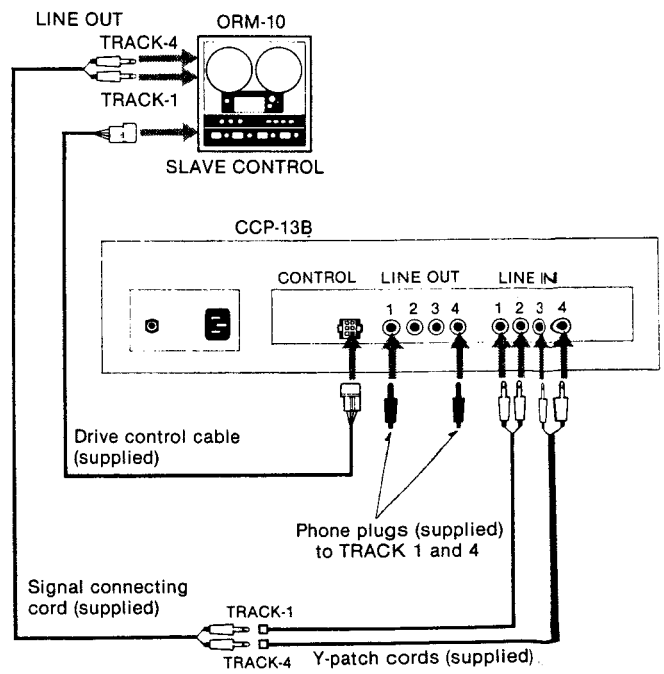


*1 When using the CCP-04B cassette printer, connect the ORM-10 SLAVE CONTROL connector to the CCP-04B CONTROL INPUT connector.

*2 When connecting the signal connecting cords to the line inputs and outputs, be sure to match the tracks. Refer to the table on page 12.

For duplication from 2-track 1-channel open reel tape to cassette tape the supplied Y-patch cords and phone plugs may have to be used as illustrated below.

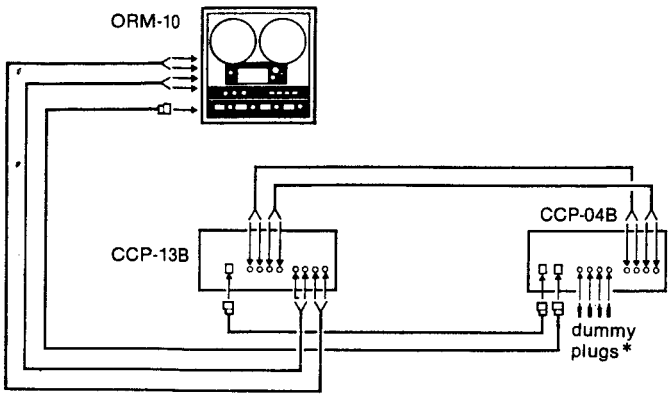
- It is not necessary to use these cords and plugs when connecting the signal connecting cord to the TRACK 1 and 4 of the LINE IN jacks of the cassette printer. See page 12.



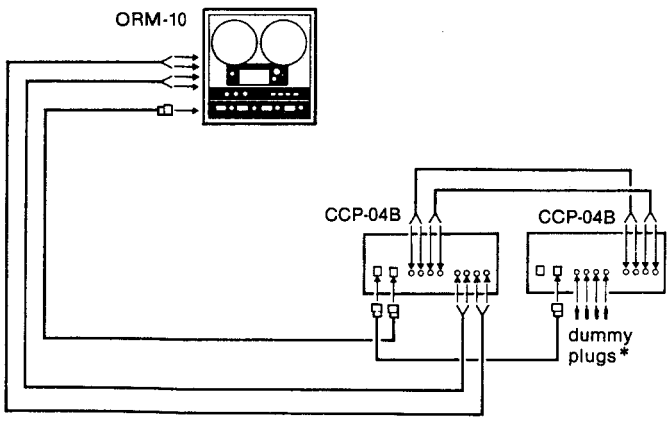
TYPICAL CONNECTION OF PRINTER SERIES

When connecting more than one cassette printer, insert four dummy plugs of 1.3 kohms (optional) into the unused LINE OUT jacks of the last-connected cassette printer for proper matching of the master line output levels.

ORM-10+CCP-13B+CCP-04B

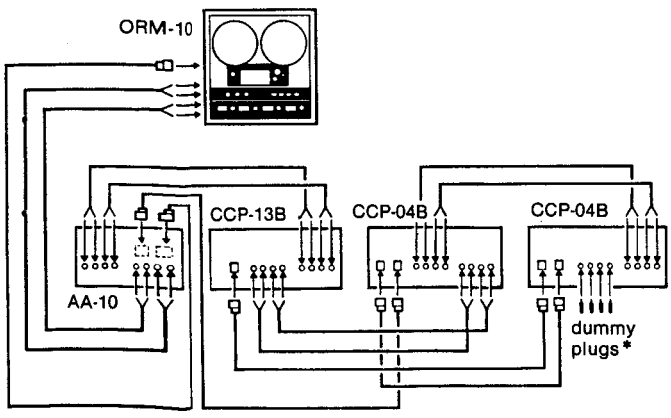


CRM-10+CCP-04B+CCP-04B



ORM-10+AA-10+CCP-13B+CCP-04B+CCP-04B

When connecting more than two cassette printers, it is necessary to use the AA-10 adaptor unit (optional), which permits amplification of the output levels.
For this connection, consult your nearest Sony dealer.



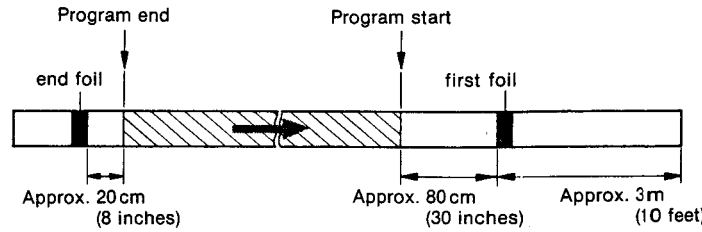
TAPE THREADING AND SENSING FOIL ATTACHEMENTS

Before threading the tape, prepare the open reel for the automatic rewind and stop systems.

❶ Attach the sensing foils (supplied).

For automatic stop: Attach the first foil before the start of the tape program.

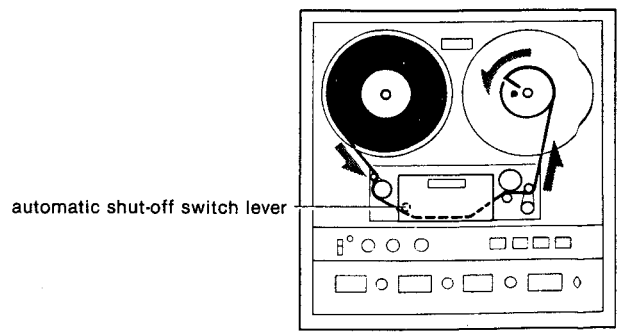
For automatic rewind: Attach the end foil at the end of the tape program.



- Place a piece of sensing foil on the outer (shiny) side of a tape.
- It is necessary to allow sufficient tape length (about 3 m or 10 feet) before the first foil. For short leader tape, splice the tape with a commercially-available tape leader.

❷ Install the reels and lock them with the built-in reel holders.

❸ Thread the tape as illustrated; be sure to pass the tape above the tape guide and under the tension-arm guide and the automatic shut-off switch lever.



Note: If sensing foils are not attached, the automatic rewind and stop mechanisms will not function.

CUEING THE TAPE START

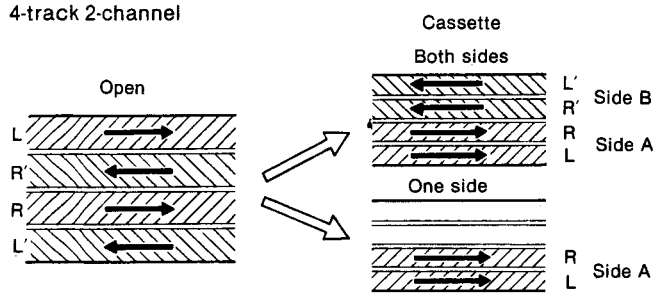
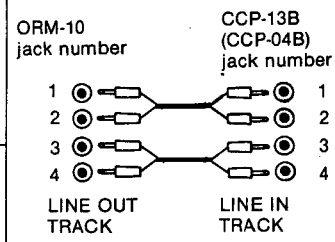
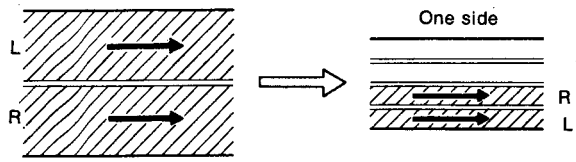
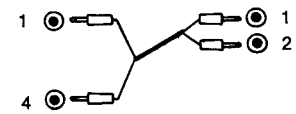
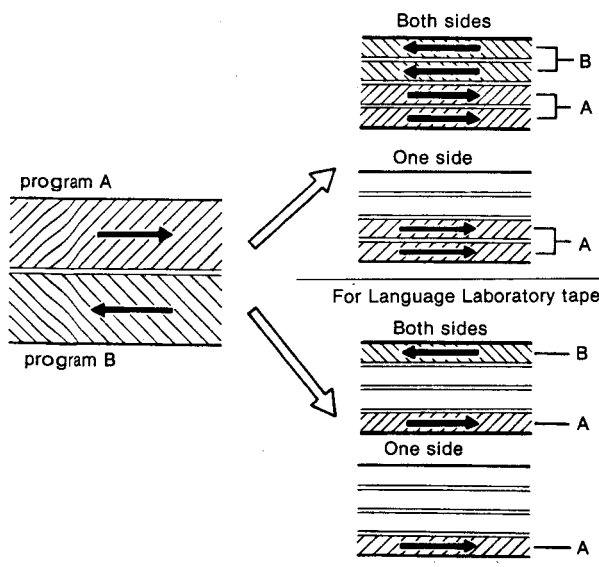
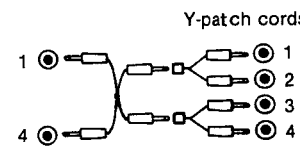
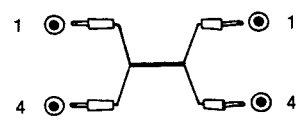
Before duplicating, test the tape motion.

To cue the tape start: After threading the tape with foils attached, depress the ▶STAND BY button. The tape will stop automatically at the first foil.

To start duplication: At the cued portion provided by the first foil, depress the ▶COPY button. The tape will be set in the forward mode, and will be rewound automatically at the end foil, passing through the first foil, stopping automatically, (the ▶STAND BY button lights up), and then go into the forward mode and stop automatically at the first foil. The tape is at stand by for starting the duplication here. The duplication can be made when the ▶COPY button is depressed.

TRACK CONNECTIONS AND TRACK SELECTOR ADJUSTMENTS

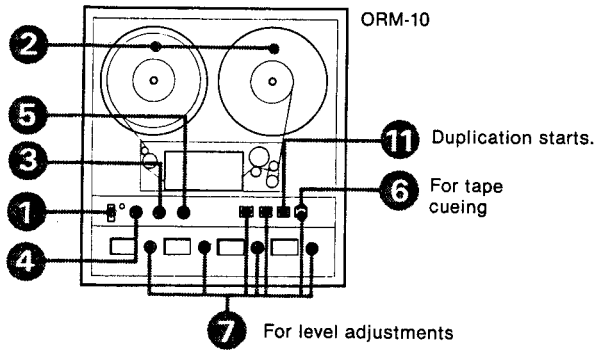
The ORM-10 TRACK selector is used to send the proper output signals to the cassette printer. At the 2T-2CH position, only the TRACK-1 and TRACK-4 LINE OUT jacks are opened to send the signals.
Change the cord and track connections according to the master open reel tape program and set the track selectors to the appropriate positions as listed below.

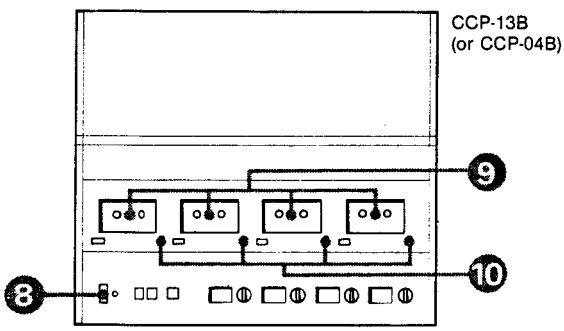
<table>
<tr><th>Open reel tape program to cassette tape</th><th>ORM-10 TRACK selector</th><th>CCP-13B (CCP-04B) track selector</th><th>Track connections with signal connecting cord</th></tr>
<tr><td>4-track 2-channel
 
</td><td rowspan="2">4T-4CH</td><td>4 CH
(for both sides)</td><td rowspan="2"> 
</td></tr>
<tr><td>2 CH
(for one side)</td></tr>
<tr><td>2-track 2-channel (stereo program)
 
</td><td>2T-2CH</td><td>2 CH
(one side)</td><td> 
</td></tr>
<tr><td rowspan="4">2-track 1-channel (monaural program)
 
</td><td rowspan="4">2T-2CH</td><td>4 CH
(both sides)</td><td rowspan="2"> 
</td></tr>
<tr><td>2 CH
(one side)</td></tr>
<tr><td>4 CH
(both sides)</td><td rowspan="2"> 
</td></tr>
<tr><td>2 CH
(one side)</td></tr>
</table>

OPERATION

When connection and tape threading are finished, start the duplication.

- The numbers in the illustrations refer to the sequence of operations.





ORM-10

❶ Set the POWER switch to ON. Build-up time is 10 seconds.
❷ Thread the open reel tape.
❸ Set the REEL SIZE selector to "7" or "5" according to the reel used.
❹ Set the TAPE SPEED selector to match the recorded speed.
❺ Set the TRACK selector according to the tape used. Refer to the table on page 12.
❻ Depress the ▶STAND BY button for cueing the tape start; the tape will be set in the forward mode and then stop automatically at the first foil attached.
❼ Depress the ▶STAND BY button again for level adjustments. Turn the MASTER LEVEL control of each track so that the pointers of the level meters deflect as closely as possible to 0 level at the highest signal-level passage of the program. At the end foil, the tape stops automatically. Depress the ◀◀REW button to rewind the tape to the tape start (passing through the first foil), and depress the ■STOP button. Then depress the ▶STAND BY button again to cue the program start.

CCP-13B (CCP-04B)

❽ Set the POWER switch to ON. Build-up time is a few seconds.
❾ Insert blank cassettes. See "CASSETTE INSERTION" on page 7.
- Do not insert a cassette in the CCP-13B ORIGINAL compartment in order to give priority to the automatic rewind and stop mechanisms of the ORM-10. In this case, the master tape mechanism will move with the operating button.

❿ Set the track selectors to 2CH or 4CH according to the open reel tape program. Refer to the table on page 12.

⓫ Depress the ORM-10 ▶COPY button to start the duplication: the ORM-10 goes into the playback mode, and the CCP-13B (CCP-04B) into the duplicating mode; the CCP-13B (CCP-04B) RECORD indicators will light and the level meters of the CCP-13B and ORM-10 will deflect.
When duplicating is complete, each printer will rewind or stop automatically. See "TYPICAL OPERATING CONDITIONS".
In the 2CH mode depress the STOP button of the CCP-13B (CCP-04B) to stop the duplication; the RECORD indicators will go off.
- If sensing foils are not attached, depress each rewind and stop button of the ORM-10 and CCP-13B or CCP-04B when the duplication is finished.

NOTES

- The ▶COPY button of the ORM-10 activates the CCP-13B or CCP-04B. However, the ▶STAND BY, ■STOP and ◀◀REW buttons of the ORM-10 do not activate the CCP-13B or CCP-04B.
For the positions of the operating buttons of the printers, refer to the table "TYPICAL OPERATING CONDITIONS".
- During duplication, take care not to touch the operating buttons of the CCP-13B or CCP-04B.
- Even if the ORM-10 POWER switch is in the OFF position, the ORM-10 ▶COPY button activates the connected CCP-13B or CCP-04B.
- When using the original cassette section of the CCP-13B for cassette-to-cassette duplication, be sure to remove the plugs from the CCP-13B LINE IN jacks.

TYPICAL OPERATING CONDITIONS

Driving signals are relayed from the ORM-10 and control the operating mode of the cassette printer(s) according to their left-most track selector setting(s).

AUTOMATIC REWIND AND STOP SYSTEMS

ORM-10: At the attached end foil, the tape will be rewound automatically and at the attached first foil it will stop automatically. The ORM-10 TRACK selector has no relation to the automatic rewind and stop systems.

Cassette printer(s): When the left-most track selector(s) is(are) set to 4CH, the cassette tapes will be rewound automatically with the end foil of the ORM-10, and at each beginning-of-tape the cassette tapes will stop automatically.

When the selector(s) is(are) set to 2CH, the cassette tapes will stop automatically at each end-of-tape.

ORM-10		Cassette printer	
Operating button	Mode	Operating button	Mode
STAND BY	Cueing (only ORM-10 stops at first foil)		—
COPY	Reproduction → Auto rewind → Cueing (independent) → Auto stop (independent)	relayed	Record → Auto rewind → Auto stop
		relayed	Auto rewind
		track selector 4CH	
			Record → Stop (tape end)
		track selector 2CH	
REW	Rewind (independent)		—
STOP	Stop (independent)		—
		REWIND	Rewind
		STOP	Stop

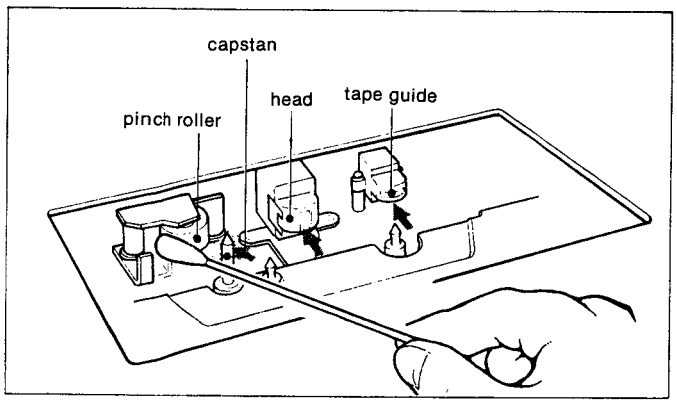
MAINTENANCE

CLEANING THE HEADS AND TAPE PATH

Keeping the tape heads clean is essential to the proper operation of the printers. Accumulation of dust and tape oxides on the heads and tape path will result in sound dropouts, a loss of high frequencies and excessive tape wear. Cleaning before every use is recommended.

TO CLEAN THE HEADS
CCP-13B (CCP-04B)

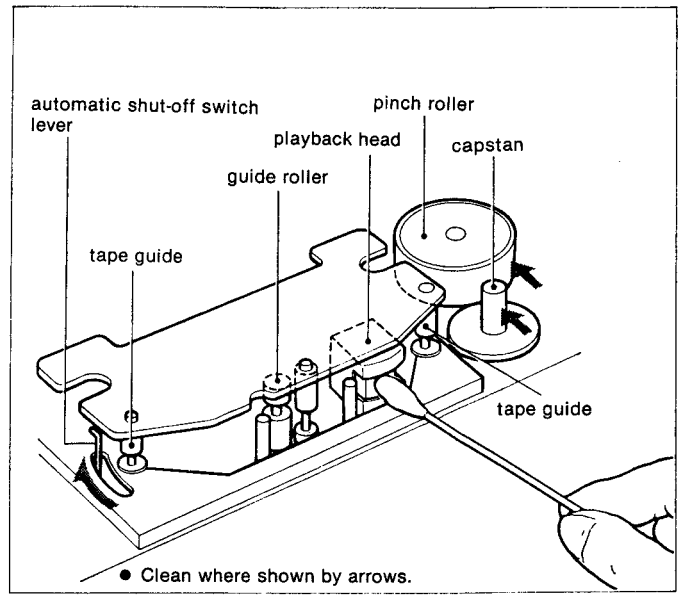
❶ Remove the cassettes, if present.
❷ Turn the POWER switch ON.
❸ Depress the CCP-13B RECORD button to move the heads out for easier access. If the CCP-04B is connected to the CCP-13B, the heads of the CCP-04B will also be moved out.
• When the CCP-04B is connected to the ORM-10, depress the ORM-10 ▶COPY button.
❹ Moisten the head cleaning tip (supplied) or a soft cloth with denatured alcohol, and gently wipe the heads, capstan, pinch roller and tape guide in each compartment.
• Avoid catching the cotton between the pinch roller and capstan.



❺ Depress the STOP button to retract the heads and tape path.
• Do not insert a cassette if the heads are protruding.
• Do not insert a cassette before the alcohol has dried completely.

ORM-10

❶ Remove the head cover by merely pulling it out.
❷ Turn the POWER switch ON.
❸ Moisten the head cleaning tip (supplied) or a cotton swab with a denatured alcohol, and gently wipe the head, capstan, pinch roller, guide roller, tape guide and automatic shut-off switch lever over which the tape travels.
To wipe the pinch roller and capstan, hold the automatic shut-off switch lever depressed upwards and depress the ▶STAND BY button.
• Avoid catching the cotton between the pinch roller and capstan.
❹ Release the lever to stop the rotation.
• Do not thread a tape before the alcohol has dried completely.



DEMAGNETIZING THE HEADS

Residual magnetism will gradually build up on the heads through continuous use and cause an increase of tape noise in duplicating, erasure of high frequencies, or hiss build-up on your prerecorded tape (master tape). The heads and metallic parts of the tape path should be demagnetized after every 20–30 hours of operation with a commercially-available head demagnetizer.
• Be sure the printer is turned off when demagnetizing the heads.

CLEANING THE CABINET

Clean the cabinet, panel and controls with a soft cloth slightly moistened with water or a mild detergent solution. Do not use solvents such as alcohol, benzine or thinner as they may mar the finish of the cabinet.

LUBRICATION AND INTERNAL CHECK

To maintain optimum performance, consult your nearest Sony Service Facility or Sony dealer for a lubrication and an internal check once every six months.

REPLACEMENT OF THE SPARE PARTS

About, 1,000 hours operation will wear out the pinch roller, reel spindle, frequency generator belt, capstan belt, tension pulley and rewind idler.
When replacing these parts, consult your nearest Sony dealer.

SPECIFICATIONS

CCP-13B/CCP-04B

Power requirements	USA and Canadian models 120 V ac, 60 Hz European model 220 V ac, 50 Hz UK model 240 V ac, 50 Hz General Export model 110 V ac, 50/60 Hz
Power consumption	**CCP-13B:** 93 W **CCP-04B:** 90 W
Recording system	4-track 4-channel, 4-track 2-channel
Tape cassette	Normal TYPE I cassettes (C-46, 60, 90) including Sony SHF, HFX, LNX (in USA and Canada) or AHF, BHF, CHF (in other countries)
Tape speed	38 cm/s (15 ips)
Frequency response	50 Hz – 10,000 Hz
Recording bias frequency	480 kHz
S/N	45 dB
Total harmonic distortion	3%
Wow and flutter	0.2% (WRMS)
Crosstalk (in duplication)	4-track 4-channel Better than 55 dB (1 kHz) between tracks 2 and 3 Better than 26 dB (1 kHz) between tracks 1 and 2 or tracks 3 and 4 4-track 2-channel Better than 75 dB (1 kHz) between tracks 2 and 3
Inputs	Line inputs (4 phone jacks) sensitivity 24.5 mV (–30 dB) 0 dB = 0.775 V input impedance 10 kilohms
Outputs	Line outputs (4 phone jacks) output level 24.5 mV (–30 dB) load impedance more than 10 kilohms
Drive control connectors	**CCP-13B** 1 input and output (6-pin Amplok) **CCP-04B** 1 input, 1 output (6-pin Amplok)
Dimensions	Approx. 693 × 173 × 568 mm (w/h/d) (27¼ × 6⅞ × 22⅜ inches) including projecting parts and controls
Weight	Approx. 22.5 kg (49 lb 9 oz)
Accessories supplied	**CCP-13B** AC power cord (1) Head cleaning tip (1 set) Dust cover (1) Service parts kit (only for European and General Export models) (2 sets) **CCP-04B** AC power cord (1) Head cleaning tip (1 set) Signal connecting cords with phone plugs (2) Drive control cable with 6-pin Amplock (1) Dust cover (1) Service parts kit (only for European and General Export models) (2 sets)

ORM-10

Power requirements	USA and Canadian models 120 V ac, 60 Hz European model 220 V ac, 50 Hz UK model 240 V ac, 50 Hz General Export model 110 V ac, 50/60 Hz
Power consumption	140 W
Track system	4-track 4-channel, 2-track 2-channel, 2-track 1-channel
Tape speed	152 cm/s (60 ips), 76 cm/s (30 ips)
Copy time	Approx. 6 min. at 152 cm/s (60 ips) with 550 m (1800 feet) tape
Rewind time	Approx. 1 min. 40 sec. with 550 m (1800 feet) tape
Reels	180 mm (7 inches), 130 mm (5 inches)
Motors	3 motors
Frequency response	40 Hz – 12,500 Hz ±3 dB (at 19 cm/s – 7½ ips original speed)
S/N	50 dB
Harmonic distortion	1%
Wow and flutter	0.2% WRMS as measured on the copying cassette
Outputs	Line outputs (4 phone jacks) output level 24.5 mV (–30 dB) 0 dB = 0.775 V Load impedance more than 10 kilohms
Slave control connector	1 output (6-pin Amplok)
AC outlet	1 unswitched, 300 watts max. (only for USA and Canadian models)
Dimensions	Approx. 430 × 453 × 271 mm (w/h/d) (17 × 17⅞ × 10¾ inches) including projecting parts and controls
Weight	Approx. 23.5 kg (51 lb 13 oz)
Supplied accessories	AC power cord (1) Signal connecting cords with phone plugs (2) Y-patch cords (2) Drive control cable with 6-pin Amplok (1) Phone plugs (2) 7-inch reel (180 mm) (1) Sensing foils (1 set) Head cleaning tip (1 set) Dust cover (1)
Optional accessories	1.3 kilohm dummy plugs

GENERAL

Copy time

	Copy time	Rewind time	Total time
C-46	3 min.	55 sec.	3 min. 55 sec.
C-60	4 min.	1 min. 10 sec.	5 min. 10 sec.
C-90	6 min.	1 min. 45 sec.	7 min. 45 sec.

(approximate times)

Number of copied cassettes

System	Per hour	Per day (7 hours)	Per week (5 days)
CCP-13B	12×3=36	12×3×7=252	12×3×7×5=1260
CCP-13B+CCP-04B	12×7=84	12×7×7=588	12×7×7×5=2940
ORM-10+CCP-13B	12×3=36	12×3×7=252	12×3×7×5=1260
ORM-10+CCP-13B+CCP-04B	12×7=84	12×7×7=588	12×7×7×5=2940

With the C-60, not including cassette handling time.

While the information given is true at the time of printing, small production changes in the course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

Note

Appliances conform with EEC Directive 76/889 regarding interference suppression.

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AVANT LA MISE EN SERVICE

Voici une étude complète des duplicateurs à grande vitesse: le duplicateur cassette sur cassette CCP-13B, le duplicateur à bobine maître ORM-10 et le duplicateur de cassette CCP-04B.
Grâce au branchement multiple de ces appareils, il est possible de copier simultanément jusqu'à 11 cassettes. Pour en copier plus de 11, il convient d'utiliser l'adaptateur AA-10 pour amplifier les niveaux de sortie.
Chaque duplicateur est disponible séparément.

ENREGISTREMENT PERSONNEL

Les numéros de série et du modèle se trouvent à l'arrière du CCP-13B et du CCP-40B ainsi que sur le côté droit du ORM-10. Inscrire ces numéros dans les espaces aménagés ci-dessous. Rappeler ces numéros lorsqu'on contacte un concessionnaire Sony pour tout problème relatif à ces appareils.

Modèle N° CCP-13B Série N°_____
Modèle N° CCP-04B Série N°_____
Modèle N° ORM-10 Série N°_____

AVERTISSEMENT

- Pour éviter tout risque d'incendie ou d'électrocution, ne pas exposer l'appareil à la pluie ou à l'humidité.
- Pour éviter tout risque d'électrocution, ne pas ouvrir le coffret. Ne confier l'entretien qu'à un personnel qualifié.

PRECAUTIONS

Sécurité
- Avant la mise en service, vérifier que l'appareil soit réglé sur la même tension et sur la même fréquence que celles du secteur local. Se reporter au chapitre "REMARQUES SUR LA TENSION ET LA FREQUENCE DE FONCTIONNEMENT".
- Ne faire fonctionner l'appareil qu'avec le cordon d'alimentation fourni. Ne jamais utiliser d'autres cordons.
- Débrancher l'appareil de la prise murale lorsqu'il n'est pas utilisé pendant une période prolongée. Pour débrancher le cordon, tirer sur la fiche et non sur le cordon lui-même.
- Si un objet quelconque, liquide ou solide pénètre à l'intérieur du coffret, débrancher l'appareil et le faire contrôler par un personnel qualifié avant de le remettre en service.

Mise en place
- Ne pas placer l'appareil à proximité de sources de chaleur telles que des radiateurs ou des bouches d'air chaud. Ne pas l'exposer au rayonnement direct du soleil. Ne pas le soumettre à la poussière excessive, à des vibrations mécaniques, à des chocs ou encore à des bruits excessifs tels que ceux provoqués par une machine à photocopier ou par des appareils similaires.
- Aménager une circulation d'air suffisante pour prévenir toute surchauffe interne. Ne pas placer l'appareil sur une surface molle (tapis, couvertures) ou à proximité d'étoffes (rideaux, draperies) qui seraient susceptibles d'obstruer les ouïes de ventilation.

Fonctionnement
- En cours de duplication, il convient de ne pas actionner l'interrupteur POWER des équipements pour ne pas risquer d'en enregistrer le déclic.
- Pour que le duplicateur fournisse les meilleures performances, il convient de conserver les têtes dans un parfait état de propreté. Se reporter en page 31 pour prendre connaissance des informations d'entretien.
- Si le duplicateurs cassette fonctionnent dans un endroit soumis à une température ambiante supérieure à 25°C (77°F), il convient d'intercaler une heure de pause environ toutes les 7 à 8 heures d'utilisation.
- Lorsque l'appareil n'est pas utilisé, couper l'alimentation pour économiser l'énergie et prolonger sa durée de vie.

Système
- Si l'on est déjà possesseur d'un duplicateur CCP-13A ou CCP-04A, les raccorder et les solliciter de la manière indiquée pour le CCP-13B ou CCP-04B, bien que des différences peuvent apparaître sur les indications du panneau de commande.
- Si l'on est déjà possesseur d'un duplicateur CCP-13 ou CCP-04, il convient de remarquer que les modèles CCP-13 et CCP-13B ainsi que les modèles CCP-04 et CCP-04B se distinguent par quelques différences. Lors du branchement du CCP-13 ou du CCP-04, prière de consulter le concessionnaire Sony le plus proche et lire les modes d'emploi respectifs de ces modèles pour effectuer correctement les raccordements ainsi que la procédure de fonctionnement.

Pour toute question ou problème qui ne serait pas traité dans ce manuel, consulter le concessionnaire Sony le plus proche.